

## Azaleas

Azaleas are among the most popular flowering shrubs grown in South Carolina. Good site selection and proper planting methods will make a difference in promoting healthy, vigorous plants.

Botanically, all azaleas are classified in the genus *Rhododendron*. The cultural requirements for azaleas and rhododendrons are basically the same, but their structural differences include the following characteristics:

- True rhododendrons have 10 or more stamens, and the underside of the leaves may be scaly or have small dots.
- Azaleas have five stamens; leaves do not have scales and often are covered with hairs.
- True rhododendrons are usually evergreen (there are exceptions).
- Most azaleas are deciduous, although most types used in the home landscape are evergreen.
- True rhododendron flowers tend to be bell-shaped.
- Most azalea flowers are funnel-form.

### Types of Azaleas

There are numerous azalea varieties available in South Carolina. When choosing which azaleas to add to your landscape, it is important to consider whether a variety is adapted to the area in which it will be planted. Poorly adapted varieties often give poor results year after year.

There are both evergreen and deciduous types of azaleas. Although the evergreen type is more popular for use around the home, deciduous azaleas are excellent plants for woodland settings.

**Evergreen:** Evergreen azalea hybrids that grow well in South Carolina include Southern Indica, Kurume, Kaempferi, Satsuki, Gable, Glen Dale and the Encore™ series.

There are many varieties within each of the following groups, and bloom times will vary within each group, depending on the variety. Bloom times also are dependent upon weather, planting zone and the microclimate of the area in the landscape.

Southern Indica azaleas, or Southern Indian azaleas, are popular cultivars that have both large flowers and leaves. The blooming period begins in late March and extends to early April. They are vigorous, upright growers, often reaching heights of 7 to 10 feet or more. Popular varieties include 'Formosa' (magenta), 'Mrs. G. G. Gerbing' (pure white), 'George L. Tabor' (orchid pink), 'Judge Solomon' (light pink) and 'Pride of Mobile' (rose pink).



'George L. Tabor' Southern Indica azalea with large orchid pink flowers.

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Joey Williamson, ©2013 HGIC, Clemson Extension  
 'Mrs. G.G. Gerbing' Southern Indica azalea with large white flowers.  
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Joey Williamson, ©2012 HGIC, Clemson Extension  
 'Coral Bells' Karume azalea, an early bloomer, is completely covered in small coral-pink flowers.  
 Joey Williamson, ©2012 HGIC, Clemson Extension



Joey Williamson, ©2013 HGIC, Clemson Extension  
 'Formosa' Southern Indica azalea with large magenta flowers.  
 Joey Williamson, ©2013, HGIC, Clemson Extension

Kurume azaleas are cold-hardy and adapted to all of South Carolina. They are compact plants that develop as much spread as height. Normal bloom occurs from late March to mid-April. Popular varieties include 'Coral Bells' (salmon pink), 'Hinodegiri' (vivid red), 'Pink Pearl' (clear pink) and 'Snow' (white). 'Coral Bells' is a very early blooming Karume, and at bloom the plants are completely covered in small flowers.

Kaempferi azaleas have a taller, more upright growth habit than Kurume. They are highly cold-resistant, and flower in late April and early May. Kaempferi are generally not recommended for the coastal areas. Available varieties include 'Anna Marie' (white), 'Cleopatra' (light pink) and 'Fedora' (salmon pink).

Satsuki azaleas are hardy in all of South Carolina. Plants are low-growing with large, showy blooms from May to June. Some of the more popular varieties include 'Bunkwa' (pink), 'Gumpo Pink' (pink), 'Gumpo White' (white), 'Higasa' (deep rose-pink) and 'Shinnyo-no-Tsuki' (rose border with white center).



'Gumpo Pink' Satsuki azalea.  
 Auburn University azalea trials at Camp Hill

Gable hybrids are very cold-hardy and are generally not recommended for coastal areas. They grow to be about 2 to 4 feet tall and wide, and flowers bloom from April to May. Some of the popular



varieties include 'Rosebud' (rose pink), 'Rose Greely' (white) and 'Purple Splendor' (purple).

Glen Dale hybrids grow to be about 4 to 6 feet tall and 3 to 4 feet wide. The bloom period varies, depending on the variety; some flower as early as March, while others do not flower until June. These azaleas are very cold-hardy and are generally not recommended for coastal areas. Popular varieties include 'Morning Star' (deep rose, early bloom), 'Fashion' (rose with dark blotch, mid-season bloom), 'Glacier' (white with pale green, mid-season bloom) and 'Aztec' (peach red, late-bloom).



'Glacier' Glen Dale hybrid azalea.  
Louis Williams, US National Arboretum

Encore™ series azaleas bloom twice a year, in the spring and again in late summer or fall.



'Autumn Amethyst' Encore azalea.  
Joey Williamson, ©2012 HGIC, Clemson Extension

Varieties vary widely in color, shape, size and exact bloom time, but all share the re-blooming habit. Common varieties include 'Autumn Royalty', 'Autumn Rouge', 'Autumn Amethyst' and 'Autumn Cheer'. There are currently 29 varieties with colors including white, pink, red, coral, lavender and fuchsia.



'Autumn Coral' Encore azalea.  
Karen Russ, ©2006 HGIC, Clemson Extension

**Deciduous:** Many deciduous azalea species are native to South Carolina and include sweet azalea, flame azalea, Piedmont azalea, Pinxterbloom azalea, plumleaf azalea, swamp azalea, Florida flame azalea, Oconee azalea, Alabama azalea, pinkshell azalea, coastal azalea, various selections of each species, and cultivars that are hybrid crosses of the different native species. Additionally, the 'Knap Hill' and 'Exbury' hybrids that were primarily bred in England and the Confederate series hybrids that were bred in Alabama are excellent deciduous azaleas for South Carolina. All of these hybrids have one or more native deciduous azaleas as parents.

Sweet azalea (*R. arborescens*) is a large, erect shrub that grows from 8 to 15 feet in height and width. Fragrant flowers are white to light pink and may bloom from May through July. Leaves may turn red in fall. Sweet azalea is generally not recommended for the Coastal Plain.





Sweet azalea (*Rhododendron arborescens*).  
©Thomas G. Barnes.

Flame azalea (*R. calendulaceum*) is loosely branched and upright, often growing more than 10 to 15 feet tall and wide. The non-fragrant flowers range in color from yellow to red and bloom from May to June. Fall leaf color is yellow to red. Flame azalea is not recommended for the Coastal Plain. ‘Tangerine Delight’ is a *R. calendulaceum* cross with glowing bright orange flowers and blooms in late April.

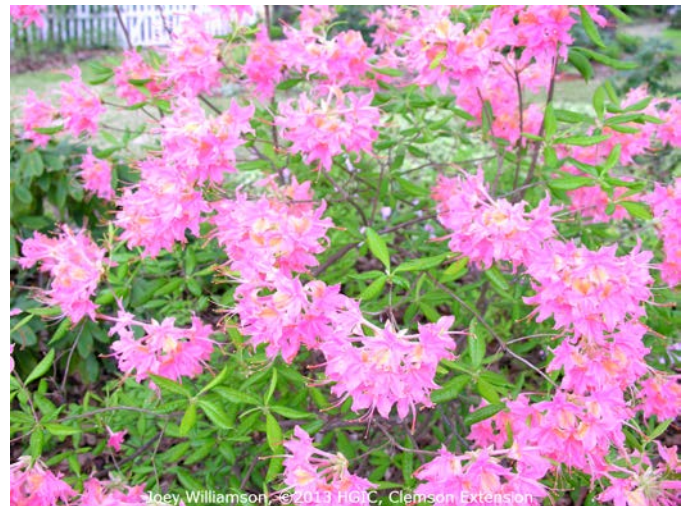


Flame azalea (*Rhododendron calendulaceum*).  
Millie Davenport, ©2006 HGIC, Clemson Extension

Piedmont azalea (*R. canescens*) is a large suckering shrub that grows 10 to 15 feet tall. Fragrant flowers range from white to pink to rose, blooming from late March to late April. The tube of the flower is often pink. A number of selections exist, with ‘Camilla’s Blush’ (a Maid in the Shade™ selection) the most popular. It has soft pink blossoms and a delightful fragrance.



Piedmont azalea (*Rhododendron canescens*) growing wild at Callaway Gardens in GA.  
Joey Williamson, ©2013 HGIC, Clemson Extension



‘Camilla’s Blush’ Piedmont azalea (*Rhododendron canescens*).  
Joey Williamson, ©2013 HGIC, Clemson Extension

Pinxterbloom azalea (*R. periclymenoides*) is a low-growing, suckering shrub that may grow to 10 feet tall, although the average height is 4 to 6 feet. Fragrant flowers vary in color from white to pale pink to deep violet, opening from April to May. Foliage is dull yellow in fall. An early blooming selection with pink flowers and rose pink buds is ‘Rosy Pink Nudiflorum’ which grows to 6 – 8 feet tall. The name *Rhododendron periclymenoides* is synonymous with *R. nudiflorum*.





Pinxterbloom azalea (*Rhododendron periclymenoides*).  
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Plumleaf azalea (*R. prunifolium*) grows 8 to 10 feet tall. Flowers are orange-red to red and bloom later than most azaleas in July and August.

Swamp azalea (*R. viscosum*) grows from 3 to 15 feet tall. Flowers are white, sometimes pink, and are clove-scented. Bloom begins mid-May to June. Swamp azalea grows in damp or wet soil. 'Summer Eyelet' is a swamp azalea selection with spice-scented white blooms in July and grows to 6 feet tall.



Swamp azalea (*Rhododendron viscosum*).  
©J.S. Peterson. USDA NRCS NPDC. USDA ARS National Arboretum, Washington, DC. June 27, 2003.

Florida flame azalea or Florida azalea (*R. austrinum*) is an excellent landscape plant with heat tolerance. This species was used in the breeding of the Confederate series to provide both vigor and the ability to grow well in the heat on the coast. The flowers are gold with shades of orange and are fragrant. The tube of the flower is often flushed with orange-red color. There are number of

selections of Florida flame azalea, such as 'Lisa's Gold' with bright gold flowers in early April (10 to 12 feet tall), 'Firecracker' with striking orange blooms with a touch of red (8 feet tall), and 'Rushin's Austrinum' which has bright yellow flowers in mid-April (8 to 10 feet tall). All of the selections have wonderful fragrances. 'Kelsey's Glow' is a *R. austrinum* cross which has bright yellow blooms with reddish hues in mid-April and grows from 10 to 12 feet tall.



Florida flame azalea (*Rhododendron austrinum*) with bright golden orange flowers and deep orange floral tubes.  
Joey Williamson, ©2013 HGIC, Clemson Extension

Oconee azalea (*R. flammeum*) is a very heat tolerant native with flowers that may range from yellowish-orange to orange to deep red. The flowers appear in early April, but are not fragrant. 'Lucky Lady' is a *R. flammeum* cross with vibrant red flowers in mid-April and grows to 6 to 8 feet tall.



Oconee azalea (*Rhododendron flammeum*).  
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Alabama azalea (*R. alabamense*) has snowy white flowers with a prominent yellow blotch. The plants are low growing and spread by stolons or underground stems. They bloom in mid-April to May, and the flowers have a lemon-spice fragrance.



Alabama azalea (*Rhododendron alabamense*) with white, fragrant flowers.  
Joey Williamson, ©2013 HGIC, Clemson Extension

Coastal azalea (*R. atlanticum*) is native along the Eastern seaboard coast and is a low-growing, stoloniferous plant (that is, it spreads by underground stems). It spreads quickly in sandy soils, but spread is restricted in heavier clay soils. The white flowers are blushed with pink and have a yellow blotch.

Pinkshell azalea (*R. vaseyi*) is a rare native with delicate pink to white flowers and is one of the first to bloom in the spring. This species typically grows at higher elevations.

Many hybrids exist among the various native deciduous azaleas. Some may be natural crosses, but many are bred. One impressive hybrid is ‘Kennell’s Gold’ ((*R. atlanticum* x *R. nudiflorum*) x *R. austrinum*), which has golden yellow flowers with pale orange floral tubes. This hybrid will grow from 12 to 15 feet tall and flowers in early April.

Other crosses of native azaleas found in the landscape trade for sale are:

- ‘My Mary’, is a cross of (*R. atlanticum* x *R. periclymenoides*) x *R. austrinum* and has large

yellow fragrant flowers. It blooms in April and grows to 8 feet tall.

- ‘Nacoochee Princess’, which is a *R. atlanticum* x *R. periclymenoides* hybrid, has large, white fragrant flowers with a slight tint of pink. This hybrid will grow from 8 to 10 feet tall.



‘Kennell’s Gold’ hybrid azalea (*Rhododendron atlanticum* x *R. nudiflorum* x *R. austrinum*).  
Joey Williamson, ©2013 HGIC, Clemson Extension

- ‘Sautee Sunset’ is a *R. flammeum* x *R. alabamense* hybrid with peachy-pink flowers with a soft yellow throat. It will grow from 6 to 8 feet tall.
- ‘Darlin’s Dream’ is a *R. canescens* x *R. alabamense* cross and has white flowers with lavender-pink edging and a golden yellow throat. It blooms in mid-April and grows from 10 to 12 feet tall.

Knap Hill and Exbury hybrids are the result of crosses involving several species. They grow 8 to 12 feet tall with a spread almost as wide. Boldly colored flowers bloom from April to May. Flower colors range from white to cream, yellow, pink, orange or red; many colors are very bold. Knap Hill and Exbury hybrids are not recommended for the Coastal Plain. One of the most heat-tolerant and popular of the Knap Hill hybrids is ‘Gibraltar’, which grows 6 to 8 feet tall and blooms in mid-April with fragrant, vivid flame-orange flowers with ruffled petals.

The Confederate series of azaleas include 11 cultivars that were bred in Alabama, with ‘Admiral



Semmes', 'Stonewall Jackson' and 'Frederick O. Douglass' being some of the most popular. The cultivars of the Confederate series have the Florida flame azalea (*R. austrinum*) as one of their parents, with the result that these azaleas have greater vigor and more heat tolerance than the Knap Hill and Exbury hybrids. The Confederate series of azaleas may even be grown on the coast because of this greater heat tolerance.

- 'Admiral Semmes' is the most heat tolerant, is fast growing to 4 feet tall, and has very fragrant, large yellow blooms.



'Admiral Semmes' Confederate series hybrid azalea flowers beside seed pods produced the previous season.  
Joey Williamson, ©2013 HGIC, Clemson Extension

- 'Frederick O. Douglass' has fragrant, white and soft pink petals with a yellow throat.



'Frederick O. Douglass' Confederate series hybrid azalea.  
Joey Williamson, ©2013 HGIC, Clemson Extension

- 'Stonewall Jackson' has fragrant, medium-orange blooms.



'Stonewall Jackson' Confederate series hybrid azalea.  
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## Buying Plants

Azaleas are usually sold as container-grown plants. They are occasionally available as balled-and-burlapped (B&B). Buy plants that are well-branched and sturdy. Those that have weak, spindly growth usually have a poor root system.

## Planting Sites

Site selection is very important. Azaleas prefer light to moderate shade. In spring, flowers last longer on plants in filtered sun than those in full sun. This is especially true of late-flowering plants. Azaleas located in full sun are more susceptible to lace bugs than those grown in partial shade. Heavy shade, however, causes weak growth and a reduction in flower production. In winter, azaleas in partial shade usually suffer less cold injury to both the plants and flowers.

Azaleas planted under pine trees generally do well, as the moderate filtered shade and acidic soil are ideal conditions for vigorous growth. Those planted under shallow-rooted trees (maple, ash, some oaks) have difficulty competing with these other trees for moisture and nutrients. If the landscape does not have an area with filtered shade, then choose a planting site that will receive morning sun and afternoon shade.

## Planting Time

Container-grown azaleas can be planted any time of year, provided they are watered properly. Most are bought and planted in spring when in flower. Planting in spring, however, requires special attention to watering to ensure survival through the heat of summer. Buying and planting in fall allows

the plant to become better established before next year's hot weather arrives. The disadvantage to fall planting is that you cannot actually see the plant in bloom.

Container-grown plants may be root-bound. If you notice roots circling the outside of the root ball after removing the plant from the container, make three or four cuts (equally spaced, a quarter-inch deep) from the top of the soil mass to the bottom with a sharp knife. Roots will be encouraged to spread into the soil and water can penetrate into the root ball.

When planting balled-and-burlapped plants, remove any wire or nylon strings or straps from the root ball and trunk. The burlap can be left around the root ball but should be pulled away 6 to 8 inches from the top. Check to be sure there is no plastic inside the burlap. Remove any plastic or artificial burlap before planting.

## Preparing the Soil

Azaleas grow best in acid (4.5 - 6.0 pH), well-drained soils high in organic matter. Before planting have the soil tested and adjust the pH according to soil test results.

Azaleas are shallow-rooted plants that are easily damaged by excessive soil moisture. When planted in poorly drained soils, azaleas do not receive the oxygen required for healthy growth and often develop root rot diseases.

## Organic Amendments

Organic amendments such as composted products are applied to soils to improve the nutrient and water-holding capacity of soils, or, in general terms, to improve soil tilth. Research has shown that when adding organic matter to a soil, it is best to incorporate it throughout the rooting zone as opposed to placing it in the planting hole. By incorporating an amendment uniformly in the soil, the entire rooting area becomes a uniform growing environment for roots. Azaleas do not tolerate wet soils, so it is important to avoid this problem by digging and amending a large area when planting them.

On the other hand, when a planting hole alone is amended, the structure of the soil in the hole can differ significantly from that of the surrounding

native soil, if an excessive amount or the wrong type of amendment is added. This can encourage the roots to stay within the confines of the hole and discourages them from entering the surrounding native soil, especially if a perfectly round planting hole is dug.



Hand dug planting hole with notched walls to encourage root spread into surrounding soil.

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Good drainage is essential for azaleas. Organic matter added to the soil improves drainage in clay soils and will increase a sandy soil's ability to retain water and nutrients. Some types of organic materials and the amount added can also upset the water equilibrium between the surrounding native soil and the soil in the hole. Fine-textured organic matter such as peat moss, placed in the planting hole can act like a sponge in a bathtub, holding too much moisture after rain or irrigation. Coarser-textured material, such as composted pine bark, is less likely to hold excess moisture. In heavy clay soils, use a shovel or mattock to notch out the sides of the round planting hole. This will enable growing roots to more easily enter the surrounding soil.

Organic matter should comprise approximately 10 to 20 percent of the total soil volume. For example, preparing a bed 8 inches deep requires the addition of about 1 to 2 inches of organic matter such as compost, leaf mold, or composted pine bark. Drainage can be improved in clay soils by deep tilling prior to adding organic matter.

Composted materials immediately provide organic matter to the soil. Do not use uncomposted bark products as amendments. Freshly milled bark that has not been composted will slowly rob plants of nitrogen when used as an amendment. As



microorganisms in the soil feed on bark and decompose it, they will use nitrogen in the soil. Also, the pH of the soil often drops dramatically below the desirable range when uncomposted materials are used as amendments.

Well-composted organic products have a rich, earthy smell, a crumbly appearance, and the original organic materials are no longer recognizable. For the best choices of composted material, choose either well decomposed material from your home compost pile, or purchase composted pine bark. The composted pine bark may still contain some small bark chips, but this can aid in improving the internal drainage in fine-textured clay soils. Additionally, composted pine bark may help suppress certain soil-borne disease-causing organisms (root rots).

## **Plant Spacing**

The area of the bed should be large enough to accommodate the plants at maturity and space for the plants on the outside to spread their roots. Information on mature plant size may be on the tag attached to the plant at purchase, but you may have to inquire with the salesperson or look this information up in a book.

When planting two or more types of plants together, add their ultimate (mature) spreads together and divide by the number of plants to calculate their spacing. For example, if planting an azalea with a mature spread of 4 feet with another type of shrub whose mature spread is 6 feet, the planting distance between them is 5 feet ( $4 + 6$  divided by 2). Some "common sense" adjustments may have to be made at times when expected growth rate and plant spread may be reduced because of less than ideal conditions, or if vigorous and slow-growing plants are planted together.

After calculating the area of the bed, dig the entire bed 6 to 8 inches deep. If you choose to add organic matter to improve drainage, mix in 1 to 2 inches of composted pine bark throughout the bed prior to planting.

## **Planting**

Place each plant in the bed based on the space needed for growth to its mature size. For each plant, dig a hole only as deep as the root ball. The top of the root ball should be level with (or just slightly

higher than) the ground level. It should never be lower than ground level.

Tamp down the area on which the root ball will rest to give it some firm footing. This will also prevent it from sinking below the level of the soil. After planting, lightly firm the amended soil around the roots. Mulch plants and then water them well to eliminate air pockets. Do not apply commercial fertilizers into the soil or around the plant at planting. However, a small quantity of a complete organic fertilizer may be mixed throughout the backfill soil to provide the nutrients for enhanced root growth. Premium brands of organic fertilizers have added beneficial bacteria that will colonize the root system of newly planted shrubs and aid in nutrient uptake, disease prevention and stimulate root growth. Follow product label directions.

For single plants, dig a planting hole the same depth as the root ball and two to three times wider than the area to be covered by the branches of the plant you are setting. Place the plant in the center of the planting hole (be sure the top of the root ball is level with or higher than the ground level). Shape a ring of soil about 3 inches high and 2 feet from the main stem to direct the flow of rainwater to the plant.

If the chosen planting site is not well-drained, prepare a raised bed. Elevate the area to ensure good surface and internal drainage. Dig a shallow hole (or planting area) so that the top of the root ball is not at ground level but elevated several inches above ground level. Build up around the root ball with topsoil.

Most soils in South Carolina are acidic enough for optimum growth of azaleas except for soils along the coast, and possibly around the foundations of new homes. Discarded mortar in areas around new construction often causes the pH to become too basic for azaleas. This soil should be removed and replaced with new soil before planting azaleas. Have soil tested to determine pH and fertilizer requirements.

## **Mulching**

Finally, apply 3-inch thick layer of organic mulch, such as compost, pine straw, ground up leaves, or pine bark around the plants (or throughout the entire bed). Mulch will help moderate soil temperatures,

conserve moisture and discourage weeds. Pull the mulch away from the main stem to prevent disease.

## Watering

Watering newly planted azaleas is essential. This is especially true when planting in spring. Their shallow roots will dry out quickly during periods of limited rainfall. When the soil appears dry, water thoroughly to wet the soil to a depth of 8 to 12 inches. Avoid overhead irrigation to reduce incidence of disease. Soaker hoses or drip irrigation that applies water slowly to the base of plants is recommended.

Be mindful that azaleas do not like wet soils. It is important to reach a balance of regular, deep watering and good drainage to promote a healthy plant.

For further information on the care of azaleas, refer to [HGIC 1059, \*Azalea Care\*](#). More information on disease and insect problems on azaleas is available in [HGIC 2050, \*Azalea & Rhododendron Diseases\*](#) (includes disease-resistant varieties), and [HGIC 2051, \*Azalea & Rhododendron Insects\*](#).

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Revised by Joey Williamson, HGIC Horticulture extension Agent, Clemson University 12/13. Originally prepared by Debbie Shaughnessy, HGIC Horticulture Specialist, and Bob Polomski, Extension Consumer Horticulturist, Clemson University. (New 07/00. Revised 11/06. Images added 11/06.)

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